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| APPLICATION NO.                        | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.    | CONFIRMATION NO. |
|--|-------------|----------------------|------------------------|------------------|
| 09/805,111                             | 03/14/2001  | Neo Chee Peng        | M4065.0394/P394        | 1491             |
| 24998                                  | 7590        | 04/14/2005           | EXAMINER               |                  |
| DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP |             |                      | ASHLEY, BOYER DOLINGER |                  |
| 2101 L Street, NW                      |             |                      | ART UNIT               |                  |
| Washington, DC 20037                   |             |                      | PAPER NUMBER           |                  |
|  |             |                      | 3724                   |                  |

DATE MAILED: 04/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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|                              |                                      |                                       |  |
|------------------------------|--------------------------------------|---------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>09/805,111 | <b>Applicant(s)</b><br>PENG, NEO CHEE |  |
|                              | <b>Examiner</b><br>Boyer D. Ashley   | <b>Art Unit</b><br>3724               |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 3/24/05 & 3/2/05.  
 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4,5,7 and 8 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed..  
 6) ☒ Claim(s) 1,2,4,5,7 and 8 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:  
         1. ☐ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/24/05 and 3/52/05 has been entered.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 4-5, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 307, 509, hereinafter EP '509, in view of Saito et al., U.S. Patent 6,080,263.

EP '509 discloses the invention substantially as claimed, including a support (108) for holding a wafer having a protective tape thereon; a cutting element (65/103/105) placed at a first predetermined distance from the support for moving relative to the support; a sensor (90/110) for sensing (column 2, lines 10-15) with a detector (column 2, lines 4-5 and lines 12-16; column 6, lines 56) abnormalities during the cutting step, wherein the detector (column 2, lines 4-5) is positioned relative to the

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protective tape (see column 2, lines 12-16); and a circuit (inherent if there is a sensor) for controlling the operation of the device, including stopping the operation of the device upon detection of an abnormality.

EP '509 does not specifically disclose that the sensor detects if the tape is properly removed or not; however, Saito et al. discloses that it is old well known in the art that tape burrs formed during the tape cutting step ultimately destroy the wafers during the back grinding step. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use the sensor of EP '509 to check to see if a tape burr was formed on the wafer and for causing the control to prevent the wafer from being transported to the back grinding device if a burr is detected.

It should further be noted that the phrase "for moving the ... removed" is merely intended use not defining any specific structure. Furthermore, there is no back grinding device positively recited and is not part of the invention. Therefore, the transport mechanism of EP '509 need only be capable of transporting the wafer to a back grinding device. In this case, the conveyor belts are fully capable of being arranged to be used with a back grinding device.

As to claims 2 and 4, the circuit of the modified device of EP '509 is capable of initiating actions by stopping the cutting operation; by stopping further movement of the wafer to a grinding area; and by preventing back grinding.

As to claim 5, the sensor of EP '509 is a mechanical sensor, in that, the all sensor have some mechanical elements. In this case, claim 5 does not specifically

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describe what a "mechanical sensor" encompasses. What is mechanical about it? EP '509 discloses a photoelectric detector, which includes mechanical elements, for example, physical structure of the light.

As to claim 8, the sensor of EP '509 is behind the cutting element because it is the only location that allows for detecting action by the cutting element.

As to the phrases "the circuit for ... apparatus" (claim 2), "the circuit ... the wafer" (claim 4) do not serve to further limit the claims because it is merely functional/intended use not defining any specific structure.

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over EP '509 in view of Saito et al.

The modified device of EP '509 discloses a first predetermined distance but is silent as to the specific distance of 0.5 mm from the edge of the wafer. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the predetermined distance of 0.5 mm in order to facilitate the sensors ability to sense based on the tolerances of the sensor, because it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

### ***Response to Arguments***

5. Applicant's arguments filed 3/24/05 have been fully considered but they are not persuasive.

Applicant contends that claim 1 includes the language "a means for initiating corrective action to stop the transport mechanism from moving the wafer to the grinding

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apparatus when the sensor detects that the protective tape is not properly removed from a wafer by said cutting element"; however, the respectfully disagrees. The currently pending claims, dated 3/2/05, do not include any "means plus function" language at all. Currently, claim 1 remains unamended regarding the circuit phrase, which reads "a circuit for initiating corrective action to stop the transport mechanism from moving the wafer to the grinding apparatus when the sensor detects that the protective tape is not properly removed from a wafer by said cutting element". As stated before, this phrase regarding the circuit is merely a recitation of intended use without any specific structure and therefore, only requires the prior art to be capable of the intended use.

Applicant contends that Matsushita lacks any sensor for detecting whether tape has been properly removed. However, as explained before, Matsushita meets the language because the language is merely intended use and because Matsushita does in fact detect improper cutting whenever the wafer chipped. If the cutter chips the wafer during cutting of the tape obviously the tape is incorrectly cut. Claim one merely suggests "for detecting if the portion of the protective tape on a wafer is *properly removed* by said cutting element". What is encompassed by "properly removed"?

Applicant contends that the use of Saito is in error and based on impermissible hindsight. As the only teaching or suggestion regarding a sensor for sensing whether a tape has been properly removed by a cutting element comes from applicant's disclosure. However, the examiner respectfully disagrees. It must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon

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hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. The examiner can in no way see how this combination is in hindsight. Saito clearly discloses the desire to prevent tape burrs from entering the back grinding device. How would Saito prevent tape burrs from entering the back grinding device without looking for them. Saito clearly discloses the problem whether or not Saito discloses a specific solution. One of ordinary skill in the art would certainly glean from Saito that there is a need to prevent tape burrs from entering the back grinding device. The sensors of Matsushita are photoelectric sensor and are clearly capable of sensing the presence of a tape burr. Again, there is no specific in the claims that is not found in the prior art.

It should further be noted that the "detector" language does not add any structure more than the use of term "sensor" and at most the claim 1 now requires that the sensor/detector be positioned relative to the tape. Obviously, the sensors/detectors of Matsushita would have to be positioned relative to the wafer in order to work. Furthermore, it should be noted that the wafer and tape are considered the workpiece not any specific structure of the invention. In apparatus claims, the work piece is not given any patentable weight, because it has been held that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it

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meets the claim. In this case, Matsushita is clearly capable of having a sensor positioned relative to the tape.


6. For the reasons above, the grounds of rejection are deemed proper.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Boyer D. Ashley whose telephone number is 571-272-4502. The examiner can normally be reached on Monday-Thursday 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Allan N. Shoap can be reached on 571-272-4514. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Boyer D. Ashley  
Primary Examiner  
Art Unit 3724

BDA  
April 11, 2005